

4.0 Consultation and Coordination

4.0 CONSULTATION AND COORDINATION

4.1 Public Involvement

Reclamation's approach to preparing the RMP and associated Draft EA was to involve the public, particularly by developing a dialogue with local stakeholder groups. The goal of the public involvement process was to make sure that all stakeholders, including the general public, have ample opportunity to express their interests, concerns, and viewpoints, and to comment on the plan as it was developed. By fostering two-way communication, Reclamation was also able to use the talents and perspectives of local user groups and agencies during the alternatives development process.

Reclamation's public involvement process involved five key components:

- **Newsbriefs** - A newsletter was initially mailed to more than 350 user groups, nearby residents, and agencies. The mailing list is continuously expanded as more interested parties are identified. Three newsbriefs have been released with one more scheduled upon completion of the Final EA and RMP.
- **Public Meetings/Workshops** – Two public meetings are included in the RMP planning process. One was held prior to the release of this Draft EA. The final public meeting is scheduled for May 2003 to take public comments on the Draft EA. Public meetings are held in Hillsboro, OR.
- **Ad Hoc Work Group** – This group consists of approximately 21 representatives from interested groups and agencies. They have met three times throughout the RMP development process to identify issues and assist with RMP update and alternatives development. One additional meeting is scheduled.
- **RMP Study Web Site** – The newsbriefs, draft materials, and meeting announcements are continuously updated at a dedicated website on Reclamation's Pacific Northwest site: www.pn.usbr.gov.
- **News Releases** – Periodically, Reclamation prepares news releases for distribution to local news media. Such news releases generally result in press coverage of the RMP process.

In December 2001, the first newsbrief introduced the RMP process, announced the public meeting, and provided a form for submitting issues and initial comments on the management and facilities at Henry Hagg Lake. Approximately 15 of these response forms were returned. The results of the mail-in response form and the issues raised at the first public meeting were summarized in the second newsbrief, mailed August 2002. The issues were listed in a table with the number of responses for each issue. The third newsbrief was mailed in April 2003 and provided an update of the Ad Hoc Work Group process and announced the Draft EA and second public meeting. The fourth newsbrief will be mailed out in December 2003 when the Final EA and RMP are complete.

The first public meeting was held on January 17, 2002 in Hillsboro. The purpose of this meeting was to conduct public scoping of the issues at Henry Hagg Lake. Approximately 30 people attended the meeting. Reclamation provided information about the RMP planning process, then the participants broke into small work groups to discuss important issues and opportunities the RMP should address.

The Ad Hoc Work Group met in February, May, September, 2002, and will meet in June 2003. As part of the May 2002 meeting, the group spent a day touring the Henry Hagg Lake study area and becoming more familiar with the issues. The 21 members were of considerable assistance in the alternatives development process. A wide variety of viewpoints was included in the group. The Preferred Alternative was arrived at through Ad Hoc Work Group discussions, and the recommendations of agency specialists and planners. The entities represented in the Ad Hoc Work Group are listed in Table 4.1-1.

Table 4.1-1. Ad Hoc Work Group.

Adjacent Land Owner	Oregon State Marine Board
Clean Water Services	Oregon Road Runners Club
Coast Guard Auxiliary	Portland State University Center for Lakes and Reservoirs
Gaston Fire Department	Portland Urban Mountain Pedallers
Joint Water Commission Water Treatment Plant	Trout Unlimited and Tualatin River Watershed Council
Mazamas	Tualatin Valley Irrigation District
Marine Patrol	U.S. Fish and Wildlife Service
NW Outdoor Science School	Washington County Board of Commissioners
Oregon Bass and Panfish Club	Washington County Parks and Recreation Advisory Board
Oregon Department of Fish and Wildlife	Washington County Parks Department
Oregon Equestrian Trails	

4.2 Agency Consultation and Coordination

Reclamation consulted with several Federal and local agencies throughout the RMP process to gather valuable input and to meet regulatory requirements. This coordination was integrated with the public involvement process.

4.2.1 Fish and Wildlife Coordination Act

Reclamation has consulted with and arranged for the U.S. Fish and Wildlife Service (USFWS) to provide a Planning Aid Memorandum (PAM) (Appendix C) under authority of the Fish and Wildlife Coordination Act (FWCA). Recommendations contained in the PAM have been incorporated in the final Preferred Alternative and evaluated in the Final EA.

4.2.2 Endangered Species Act

The evaluation of endangered species contained in this Draft EA serves as Reclamation's biological assessment as required under the Endangered Species Act (ESA). It evaluates impacts to listed and proposed for listing species including bald eagles, Oregon spotted frog, western pond turtle, and a

number of plant species. Reclamation has determined that the Preferred Alternative will not affect any of these species. If the USFWS concurs with this finding, consultation under the ESA is complete. If the USFWS disagrees with the finding, additional consultation will occur prior to the Final EA.

4.2.3 National Historic Preservation Act

As described in Section 3.14.1, Reclamation examined records of prior cultural resource investigations to determine if additional surveys were needed to accurately assess impacts under the proposed alternatives. One area was surveyed, and SHPO consultations were completed. On August 21, 2002, the SHPO concurred that sites 35WN49 and WN 50 were “not eligible” for the National Register. SHPO consultations had previously occurred for prior surveys in existing recreational areas where improvements are proposed under the RMP. When implementing the RMP, as required in 36 CFR 800, Reclamation will consult with the SHPO, interested Indian tribes, and other interested parties prior to implementing actions that have the potential to impact historic properties. In letters dated January 15, 2002, Reclamation notified the Siletz Tribe and the Grand Ronde Tribes of the intention to prepare an RMP, and requested that they inform Reclamation if they were aware of cultural resources or other important sites on the reservoir lands. As of this date, Reclamation has received no response from those tribes.

4.3 Tribal Consultation and Coordination

4.3.1 Government-to-Government Consultation with Tribes

The RMP and EA will be distributed to representatives from the Siletz, Warm Springs, and Grand Ronde Tribes. Tribal representatives that will receive the Draft EA are listed in Chapter 7, Distribution List.

4.3.2 Indian Sacred Sites (Executive Order 13007)

Reclamation informed the Siletz and Grand Ronde Tribes about the RMP and requested that they inform Reclamation if they were aware of Indian sacred sites within the study area. The notification and consultation processes were coordinated with the NHPA consultation process. The Tribes have not responded.

4.3.3 Indian Trust Assets

Reclamation coordinated with the Siletz and Grand Ronde Tribes to identify ITAs. These are fully discussed in Chapter 3, Section 3.16, Indian Trust Assets.

4.3.4 Other Laws and Regulations

The relationship between Federal agencies and sovereign Tribes is defined by several laws and regulations addressing the requirement of Federal agencies to notify or consult with Native American

groups or otherwise consider their interests when planning and implementing Federal undertakings. Among these are the following:

- National Environmental Policy Act
- Executive Order 12875, Enhancing the Intergovernmental Partnership
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Presidential Memorandum: Government-to-Government Relations with Native American Tribal Governments
- Executive Order 13084, Consultation and Coordination with Indian Tribal Governments

Reclamation has adhered to these laws and regulations as applicable to the development of the RMP.

5.0 Environmental Commitments

5.0 ENVIRONMENTAL COMMITMENTS

In addition to the BMPs and Mitigation Measures specified below, all actions identified in the Preferred Alternative are also considered to be environmental commitments.

5.1 Best Management Practices

The following best management practices (BMPs) will be implemented to avoid or minimize potential effects to the resources within the Henry Hagg Lake RMP study area that could occur under any alternative.

5.1.1 Landscape Preservation and Impact Avoidance

1. Developed facilities will complement and be subservient with the surrounding landscape wherever possible.
2. Disturbed areas resulting from any construction will be aggressively revegetated.
3. To the maximum extent practicable, all existing trees, shrubs, and other naturally occurring vegetation will be preserved and protected from construction operations and equipment, except where clearing operations are required for permanent structures, approved construction roads, or excavation operations.
4. To the maximum extent practicable, all maintenance yards, field offices, and staging areas will be arranged to preserve trees, shrubs, and other vegetation.
5. Clearing will be restricted to that area needed for construction. In critical habitat areas including, but not limited to, wetlands and riparian areas, clearing may be restricted to only a few feet beyond areas required for construction.
6. To reduce environmental damage, stream corridors, wetlands, riparian areas, steep slopes, or other critical environmental areas will not be used for equipment or materials storage or stockpiling; construction staging or maintenance; field offices; hazardous material or fuel storage, handling, or transfer; or temporary access roads.
7. Excavated or graded materials will not be stockpiled or deposited on or within 100 feet of any steep slopes (defined by industry standards), wetlands, riparian areas, or stream banks (including seasonally active ephemeral streams without woody or herbaceous vegetation growing in the channel bottom), or on native vegetation.
8. To the maximum extent possible, staging areas, access roads, and other site disturbances will be located in disturbed areas, not in native or naturally occurring vegetation.

9. The width of all new permanent access roads will be kept to the absolute minimum needed for safety, avoiding wetland and riparian areas where possible. Turnouts and staging areas will not be placed in wetlands.

5.1.2 Erosion and Sediment Control

1. The design and construction of facilities will employ applicable recognized BMPs to prevent possible soil erosion and subsequent water quality impacts.
2. The planting of grasses, forbs, trees, or shrubs beneficial to wildlife, or the placement of riprap, sand bags, sod, erosion mats, bale dikes, mulch, or excelsior blankets will be used to prevent and minimize erosion and siltation during construction and during the period needed to reestablish permanent vegetative cover on disturbed sites.
3. Final erosion control and site restoration measures will be initiated as soon as a particular area is no longer needed for construction, stockpiling, or access. Clearing schedules will be arranged to minimize exposure of soils.
4. Cuts and fills for relocated and new roads will be sloped to facilitate revegetation.
5. Soil or rock stockpiles, excavated materials, or excess soil materials will not be placed near sensitive habitats, including water channels, wetlands, riparian areas, and on native or naturally occurring vegetation, where they may erode into these habitats or be washed away by high water or storm water runoff. Waste piles will be revegetated using suitable native species after they are shaped to provide a natural appearance.

5.1.3 Biological Resources

1. TES and rare surveys will be conducted as necessary after project authorization, but prior to the start of construction. Any established search protocols will be followed. Additional information concerning avoidance of threatened or endangered species is presented in Sections 3.5 – 3.7.
2. Construction activities that could impact fish will be undertaken during non-spawning periods.
3. During the 10-year period covered by this RMP, species not currently protected under the Endangered Species Act may be listed. If any such species occur on Reclamation lands, Reclamation would enforce time of year access restrictions in areas harboring Federal and State-designated species of special concern (including Federally designated rare, endangered, or threatened species).

5.1.4 Site Restoration and Revegetation

1. Construction areas, including storage yards, will limit the amount of waste material and trash accumulations at all times.
2. All unused materials and trash will be removed from construction and storage sites during the final phase of work. All removed material will be placed in approved sanitary landfills or storage sites, and work areas will be left to conform to the natural landscape.

3. Upon completion of construction, grade any land disturbed outside the limits of reservoir pools, permanent roads, and other permanent facilities to provide proper drainage and blend with the natural contour of the land. Following grading, revegetate using plants native to the area, suitable for the site conditions, and beneficial to wildlife.
4. Where applicable, consult with the following agencies to determine the recommended plant species composition, seeding rates, and planting dates:
 - Oregon Department of Fish and Wildlife
 - U.S. Natural Resources Conservation Service (NRCS)
5. Grasses, forbs, shrubs, and trees appropriate for site conditions and surrounding vegetation will be included on a plant list developed during site design. Species chosen for a site will be matched for site drainage, climate, shading, resistance to erosion, soil type, slope, aspect, and vegetation management goals. Wetland and riparian species will be used in revegetating disturbed wetlands. Upland revegetation shall match the plant list to the site's soil type, topographic position, elevation, and surrounding communities.

5.1.5 Pollution Prevention

1. All Federal and State laws related to control and abatement of water pollution will be complied with. All waste material and sewage from construction activities or project-related features will be disposed of according to Federal and State pollution control regulations.
2. Construction contractors may be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit as established under Public Law 92B500 and amended by the Clean Water Act (Public Law 95B217).
3. Construction specifications shall require construction methods that will prevent entrance or accidental spillage of pollutants into flowing or dry watercourses and underground water sources. Potential pollutants and wastes include refuse, garbage, cement, concrete, sewage effluent, industrial waste, oil and other petroleum products, aggregate processing tailings, mineral salts, drilling mud, and thermal pollution.
4. Eroded materials shall be prevented from entering streams or watercourses during dewatering activities associated with structure foundations or earthwork operations adjacent to, or encroaching on, streams or watercourses.
5. Any construction wastewater discharged into surface waters will be essentially free of settling material. Water pumped from behind cofferdams and wastewater from aggregate processing, concrete batching or other construction operations shall not enter streams or watercourses without water quality treatment. Turbidity control methods may include settling ponds; gravel-filter entrapment dikes; approved flocculating processes not harmful to fish or other aquatic life; recirculation systems for washing aggregates; or other approved methods.

6. Any riprap shall be free of contaminants and not contribute significantly to the turbidity of the reservoir.
7. Appropriate controls to reduce stormwater pollutant loads in post-construction site runoff shall be followed. The appropriate facilities shall be properly designed, installed, and maintained to provide water quality treatment for runoff originating from all recreational facilities.
8. All parking lots and marinas should be designed to promote efficient vehicle and boat traffic to prevent congestion and pollution.
9. Waste facilities should be connected, whenever possible, to sanitary sewer systems instead of septic tanks to avoid water quality problems from failed tanks.

5.1.6 Noise and Air Pollution Prevention

1. Contractors will be required to comply with all applicable Federal, State, and local laws and regulations concerning prevention and control of noise and air pollution. Contractors are expected to use reasonably available methods and devices to control, prevent, and reduce atmospheric emissions or discharges of atmospheric contaminants and noise.
2. Contractors will be required to reduce dust from construction operations and prevent it from damaging dwellings or causing a nuisance to people. Methods such as wetting exposed soil or roads where dust is generated by passing vehicles will be employed.

5.1.7 Cultural Resource Site Protection

1. If Indian Tribes identify culturally important resources within new development areas, avoid adverse impacts to those resource locations when avoidance will allow accomplishment of broader agency responsibilities, is cost effective, and lies within Reclamation's authority.
2. Integrate cultural resource management requirements and goals into other management plans completed under the RMP, including the elk meadows management plan and the Integrated Pest Management Plan.

5.1.8 Miscellaneous Comments

1. Reclamation-issued land use licenses, leases, and permits will contain sufficient language and stipulations to protect existing resources and mitigate possible conflicts among the various users and between visitors and adjacent land owners.

5.2 Mitigation Measures

Mitigation measures are environmental commitments intended to compensate for impacts that cannot be avoided through implementation of BMPs. Mitigation measures have only been identified for water quality and public services and utilities, as identified below.

5.2.1 Water Quality

Any new equestrian trail would have seasonal restrictions to protect soil from excessive erosion and adverse effects to water quality.

5.2.2 Public Services and Utilities

WACO will monitor public use at the park and determine the appropriate level of enforcement and public safety services needed. WACO will provide the appropriate level of service through park personnel or by contracts with local entities.

5.2.3 Cultural Resources

Reclamation will complete research to determine if site 02/801-3 is eligible to the National Register. If eligible, Reclamation will identify and implement actions to either avoid further impacts to the site or to mitigate impacts.

6.0 Preparers

Henry Hagg Lake Resource Management Plan: Draft EA

6.0 PREPARERS

Name	Background	Responsibility
U.S. Bureau of Reclamation		
Carolyn Burpee-Stone	Landscape Architect	Senior Review, RMP Manager
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Jeff Bouma	Land Use Planner	Noise, Visual Resources, Land Use, Socioeconomics, Public Services and Utilities, and Transportation
Peter Carr	Technical Writer	Technical Writing, Editing
Liza MacKinnon	Production Manager	Document Production

7.0 Distribution List

7.0 DISTRIBUTION LIST

7.1 Overview

The Henry Hagg RMP Draft EA is a document intended for public review and comment. Therefore, it has been sent to the Tribes, government officials, agencies, organizations and businesses, news media, libraries, and individuals named in the following distribution list. As noted, the Draft EA is available for review at several libraries; it is also available for viewing (and downloading, if desired) on Reclamation's web site. In addition, a third Newsbrief was sent out in May which included a clip-out request order form allowing the more than 400 individuals already on the Henry Hagg RMP Draft EA mailing list to request a copy of the document (in either hard copy or digital format).

7.2 Tribes

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7.4 Agencies

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7.5 Organizations and Businesses

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Center for Lakes & Reservoirs
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Friends of Fernhill Wetlands
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Friends of Gales Creek
Nancy Spieler
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Friends of Jackson Bottom
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Salem, OR 97301

Waterwatch of Oregon
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Portland, OR 97204

7.6 News Media

Forest Grove News-Times
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Forest Grove, OR 97116-0408

Hillsboro Argus Newspaper
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Hillsboro, OR 97123

Portland Observer
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Hillsboro, OR 97123-0566

The Oregonian
1320 SW Broadway
Portland, OR 97201

7.7 Libraries

Forest Grove Public Library
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Forest Grove, OR 97116

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775 SE 10th Street
Hillsboro, OR 97123

Hillsboro Public Library
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Hillsboro, OR 97124

Multnomah Central Library
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Portland State University
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7.8 Individuals

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8.0 Glossary

8.0 GLOSSARY

Acre-foot	Volume of water (43,560 cubic feet) that would cover 1 acre land, 1 foot deep.
Action Alternative	A change in the current management approach.
Affected environment	Existing biological, physical, social, and economic conditions of an area subject to change, both directly and indirectly, as the result of a proposed human action. Also, the chapter in an environmental document describing current environmental conditions.
Alternatives	Courses of action that may meet the objectives of a proposal at varying levels of accomplishment, including the most likely future conditions without the management plan or action.
Amphibian	Vertebrate animal that has a life stage in water and a life stage on land (for example, salamanders, frogs, and toads).
Aquatic	Living or growing in or on the water.
Archeology	Related to the study of human cultures through the recovery and analysis of their material relics.
Archeological site	A discrete location that provides physical evidence of past human use.
Best Management Practices	Activities that are added to typical operation, construction, or maintenance efforts that help to protect environmental resources by avoiding or minimizing impacts of an action.
Community	A group of one or more interacting populations of plants and animals in a common spatial arrangement at a particular point in time.
Concentration	The density or amount of a substance in a solution (water quality).
Cubic foot per second (cfs)	As a rate of streamflow, a cubic foot of water passing a reference section in 1 second of time. A measure of a moving volume of water.
Cultural resource	Cultural resources are historic and traditional properties that reflect our heritage.
Drawdown	Lowering of a reservoir's water level; process of releasing reservoir storage.

Endangered species	A species or subspecies whose survival is in danger of extinction throughout all or a significant portion of its range.
Erosion	Refers to soil and the wearing away of the land surface by water, wind, ice, or other physical processes.
Exotic species	A non-native species that is introduced into an area.
Facilities	Manmade structures.
Fish and Wildlife Service Species of Concern	Species identified by the FWS for which further biological research and field study are needed to resolve these species' conservation status.
Habitat	Area where a plant or animal finds suitable living conditions.
Indian Sacred Sites	Defined in Executive Order 13007 as “any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.”
Indian Trust Assets	Legal interests in property held in trust by the United States for Indian Tribes or individuals, such as lands, minerals, hunting and fishing rights, and water rights.
Juvenile	Young animal that has not reached reproductive age.
Mitigation measures	Action taken to avoid, reduce the severity of, or eliminate an adverse impact. Mitigation can include one or more of the following: (1) avoiding impacts; (2) minimizing impacts by limiting the degree or magnitude of an action; (3) rectifying impacts by restoration, rehabilitation, or repair of the affected environment; (4) reducing or eliminating impacts over time; and (5) compensating for the impact by replacing or providing substitute resources or environments to offset the loss.
National Register of Historic Places	A Federally maintained register of districts, sites, buildings, structures, and properties that meet the criteria of significance defined in 36 CFR 63.
No Action Alternative	The outcome expected from a continuation of current management practices.

Perennial	Plants that have a life cycle that lasts for more than 2 years.
Precipitation	Rain, sleet, and snow.
Public involvement	The systematic provision for affected publics to be informed about and participate in Reclamation decision making. It centers around effective, open exchange and communication among the partners, agencies, organizations, and all the various affected publics.
Raptor	Any predatory bird, such as a falcon, eagle, hawk, or owl, that has feet with sharp talons or claws and a hooked beak.
Reptile	Cold-blooded vertebrate of the class Reptilia, comprised of turtles, snakes, lizards, and crocodiles.
Resident	A wildlife species commonly found in an area during a particular season: summer, winter, or year round.
Resource topics	The components of the natural and human environment that could be affected by the alternatives, such as water quality, wildlife, socioeconomic, and cultural resources.
Resource Management Plan	A 10-year plan developed by Reclamation to manage their lands and resources in the study area.
Riparian	Of, on, or pertaining to the bank of a river, pond, or lake.
Runoff	That part of precipitation that contributes to streamflow, groundwater, lakes, or reservoir storage.
Sediment	Unconsolidated solid material that comes from weathering of rock and is carried by, suspended in, or deposited by water or wind.
Songbird	Small to medium-sized birds that perch and vocalize or "sing," primarily during the breeding season.
Spawning	Laying eggs directly in water, especially in reference to fish.
Species	In taxonomy, a subdivision of a genus that (1) has a high degree of similarity, (2) is capable of interbreeding only within the species, and (3) shows persistent differences from members of allied species.
Threatened species	Any species that has the potential of becoming endangered in the near future and is listed as a threatened species under the Endangered Species Act.

Traditional Cultural Property	A site or resource that is eligible for inclusion in the National Register of Historic Places because of its association with cultural practices or beliefs of a living community.
Wetland habitat	Wildlife habitat associated with water less than 6 feet deep, with or without emergent and aquatic vegetation in wetlands.
Wetlands	Lands transitional between aquatic and terrestrial systems where the water table is usually at or near the land surface or the land is covered by shallow water. Often called marshes or wet meadows.

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Appendix A

Henry Hagg Lake RMP Goals and Objectives

Henry Hagg Lake Resource Management Plan: Draft EA

HENRY HAGG LAKE RESOURCE MANAGEMENT PLAN DRAFT GOALS AND OBJECTIVES

Introduction

This set of draft RMP Goals and Objectives is being prepared as part of the RMP alternatives development and analysis process. The draft Goals and Objectives were derived from: (1) the public involvement process (especially Ad Hoc Work Group discussions and clarification related to pertinent issues outlined in the Problem Statement); (2) ongoing coordination with Reclamation decision-makers regarding the scope of the RMP and Reclamation's mission/authority related to RMP preparation and implementation; (3) findings of the RMP resource inventory; and (4) input from specialists on the RMP Planning Team. These draft Goals and Objectives are intended to communicate the current direction of the RMP in terms of management philosophy, RMP requirements and approach, and potential areas for management action; they reflect the full range of issues and opportunities which must be addressed in the RMP (as presented and discussed in the separate Problem Statement document).

In many cases (i.e., where the broad direction of the RMP is clear and not subject to dispute or analysis of alternative approaches), the draft Goals and Objectives contained herein are expected to remain in their present form as part of the final RMP. This is particularly true of the goal statements and most objectives that are not facility specific. These Goals and Objectives will serve as a framework for development and analysis of the more detailed alternative plans. They will be used as criteria by which the acceptability and success of alternative courses of action will be assessed.

In some cases, however, the objectives presented in this document are truly interim and may change as a result of the RMP alternatives analysis process. Basically, the objectives are intended to guide the development of RMP alternatives. Therefore, this document should be used as an interactive part of the RMP alternatives development and analysis process and will be modified through that process. For example, one of the recreation-oriented objectives is specifically geared towards developing and maintaining an equestrian trail. This objective applies to only one of the alternatives (which are being prepared in concert with these goals and objectives); therefore, if it is determined through the planning process that it should not be part of the final plan then it will be dropped as an objective in the RMP. In this regard, the objectives that apply to only one of the alternatives (and have the potential to be dropped) are noted in this document with a “**” at the beginning of the objective.

The RMP will also be governed by a number of legal mandates, all of which will serve as guidance in both interpreting the Goals and Objectives and implementing proposed management actions. The primary among these are listed below:

Law, Executive Order, or Policy	Description
American Indian Religious Freedom Act of 1978	Provides for freedom of Native Americans to believe, express, and exercise their traditional religion, including access to important sites.
Archaeological Resources Protection Act (ARPA) of 1979, as amended	Ensures the protection and preservation of archaeological sites on Federal land. ARPA requires that Federal permits be obtained before cultural resource investigations begin on Federal land. It also requires that investigators consult with the appropriate Native American groups before conducting archaeological studies on Native American origin sites.
Archeological and Historic Preservation Act of 1974	Provides for the preservation of historical buildings, sites, and objects of national significance.
Clean Water Act (CWA) of 1974, as amended*	Provides for protection of water quality.
Clean Air Act (CAA) of 1970	Provides for protection of air quality.
Endangered Species Act (ESA) of 1973, as amended	Provides for protection of plants, fish, and wildlife that have a designation as threatened or endangered.
Executive Order 12898, February 11, 1994, Environmental Justice, as amended by Executive Order 12948, January 30, 1995.	Requires Federal agencies to consider the effects of its programs and policies on minority and lower income populations.
Executive Order 11990, Protection of Wetlands	Directs all Federal agencies to avoid, if possible, adverse impacts to wetlands and to preserve and enhance the natural and beneficial values of wetlands.
Executive Order 13007, Indian Sacred Sites, May 24, 1996	Provides for access to, and ceremonial use of, Indian sacred sites on Federal lands used by Indian religious practitioners.
Executive Order 13175, Consultation and Coordination with Indian Tribal Government, November 6, 2000 (revokes EO 13084)	<p>The EO builds on previous administrative actions and is intended to:</p> <ul style="list-style-type: none"> • Establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications. • Strengthen government- to-government relations with Indian tribes; and • Reduce the imposition of unfunded mandates upon Indian tribes.
Fish and Wildlife Coordination Act (FWCA) of 1958	Requires consultation and coordination with the U.S. Fish and Wildlife Service

Law, Executive Order, or Policy	Description
Indian Trust Assets Policy (July 1993)	Reclamation will carry out its activities in a manner which protects Indian Trust Assets and avoids adverse impacts when possible.
Migratory Bird Treaty Act of 1918, as amended	Provides protection for bird species that migrate across state lines.
Executive Order 13186, January 10, 2001. Responsibilities of Federal Agencies to Protect Migratory Birds	Requires Federal Agencies that may have a negative effect on migratory birds to develop and implement a Memorandum of Understanding with the U.S. Fish and Wildlife Service to promote the conservation of migratory birds.
National Environmental Policy Act (NEPA) of 1969	Council on Environmental Quality regulations implementing NEPA specify that as part of the NEPA scoping process, the lead agency "... shall invite the participation of affected Federal, State, and local agencies, any affected Indian tribe, ... (1501.7[a]1."
National Historic Preservation Act (NHPA) of 1966, as amended	Section 106 of the NHPA requires Federal agencies to consider the effects of any actions or programs on historic properties. It also requires agencies to consult with Native American Tribes if a proposed Federal action may affect properties to which they attach religious and cultural significance. Section 110 requires agencies to identify and appropriately manage historic properties on lands under their jurisdiction.
Native American Graves Protection and Repatriation Act (NAGPRA) of 1990	Regulations for Tribal consultation in the event of discovery of Native American graves. Requires consultation with Tribes during Federal project planning if graves might be discovered.
Presidential Memorandum: Government-to-Government Relations with Native American Tribal Governments, April 29, 1994	Specifies a commitment to developing more effective day-to-day working relationships with sovereign Tribal governments. Each executive department and agency shall consult to the greatest extent practicable and to the extent permitted by law, with Tribal governments prior to taking actions affecting Federally recognized Tribal governments.
Accessibility for Persons with Disabilities – Reclamation Policy (November 18, 1998)	Established a Pacific Northwest regional policy to assure that all administrative offices, facilities, services, and programs open to the public, utilized by Federal employees, and managed by Reclamation, a managing partner, or a concessionaire, are fully accessible for both employees and the public.

Law, Executive Order, or Policy	Description
Reclamation Policy for Land Management & Concessions	Provides policy, directives, and standards Reclamation follows in managing Federal Project lands, facilities, and concessions.
Rehabilitation Act of 1973, Title V, Section 504	Provides for access to Federal or Federally assisted facilities for the disabled. The Uniform Federal Accessibility Standards (UFAS) or the Americans with Disabilities Act Accessibility Guidelines (ADAAG), whichever is the more stringent, are followed as compliance with Section 504.
Public Law 102-575, Title 28, as amended	Provides Reclamation with the authority to cost-share on recreation projects and fish and wildlife enhancement facilities with public non-Federal managing partners on Reclamation lands and authorization for preparing RMPs.
Interior Department Manual Part 512, Chapter 2	Articulates the policies, responsibilities and procedures for consulting with tribes to identify and assess impacts to Indian trust resources.

*A permit may need to be required for construction related activities.

RMP Policy and Purpose

Reclamation's resource management policy is to provide a broad level of stewardship to ensure and encourage resource protection, conservation, and multiple use, as appropriate. Management practices and principles established in an RMP must be consistent with Project purposes and in accordance with existing Federal laws, regulations, and policies, and provide for the protection of fish, wildlife, and other natural resources; cultural resources; public health and safety; and applicable uses of Reclamation lands and water areas, public access, and outdoor recreation. Resource Management Plans are intended to be used as the basis for directing activities on Reclamation lands and reservoirs in a way that maximizes overall public and resource benefits while providing guidance for managing the area during the next 10 year period. Through implementation of an RMP, Reclamation aims to balance competing and conflicting demands for differing uses and to maximize compatibility with surrounding land uses, while affording an appropriate level of resource protection and enhancement.

Draft Goals & Objectives

As stated and shown in the above table the RMP will be governed by a number of legal mandates, all of which will serve as guidance in both interpreting the goals and objectives and implementing proposed management actions. In all cases, implementation of the draft goals and objectives listed below, and any specific management actions resulting from them, will comply with the applicable legal mandates in the above table.

Natural Resources (NAT)

Wildlife and Vegetation Management

GOAL NAT 1: *Protect, conserve, and enhance wildlife habitat and natural resources on Reclamation lands.*

Objective NAT 1.1: Avoid or minimize impacts of RMP actions on Federal and State designated species of special concern, including Federally listed rare, endangered, or threatened species.

Objective NAT 1.2: Minimize adverse impacts to wildlife and vegetation in all actions considered to accommodate public demand at recreation sites or on the surface and shoreline of Henry Hagg Lake; and utilize management practices that protect and enhance resource values of and for native species (plants and animals) in all decisions related to habitat management and land use.

Objective NAT 1.3: Protect and/or enhance wetland and riparian habitats at and adjacent to Henry Hagg Lake in accordance with existing Federal regulations and consistent with this RMP.

Objective NAT 1.4: Work with partner agencies to study and effectively control aquatic and terrestrial noxious and invasive weeds on Reclamation lands and waters, including invasive aquatic species such as zebra mussels (and other mollusks).

Objective NAT 1.5: Manage lands designated as elk meadows for the primary purpose of providing forage areas for elk; other uses of these areas should be considered secondary in importance and allowed only if shown to not pose any disturbance to elk.

****Objective NAT 1.6:** Manage lands located between developed recreation sites as land use buffer zones to protect habitat for waterfowl, other migratory birds, and upland wildlife.

Fishery Resources

GOAL NAT 2: *Protect and enhance the quality of the fishery at Henry Hagg Lake.*

Objective NAT 2.1: Recommend reservoir levels be maintained in a manner that is most beneficial to reservoir fishery resource protection within the constraints of legal and contractual operations requirements.

Objective NAT 2.2: Continue to cooperate with ODFW in ongoing monitoring of reservoir fishery conditions and improvements, as needed.

Water Quality

GOAL NAT 3: *Protect and improve water quality in Henry Hagg Lake and its tributaries.*

Objective NAT 3.1: Provide adequate sanitation and waste management facilities at all recreation sites (e.g., restrooms, floating restrooms, trash containers, RV and boat dump stations, fish cleaning stations, as appropriate) to protect water quality.

Objective NAT 3.2: Protect, enhance, restore, and develop wetland and riparian habitats as a key means of improving the quality of water entering the reservoir.

Objective NAT 3.3: Continue to prohibit motorized vehicular use on the shoreline (outside of designated recreation sites or access ways) and within the drawdown area of the reservoir.

Objective NAT 3.4: Manage the use of chemical fertilizers, herbicides, and pesticides on Reclamation lands in a manner that does not adversely affect water quality.

Objective NAT 3.5: Minimize the potential for pollutants to enter Henry Hagg Lake and its tributaries from activities on Reclamation lands.

Erosion and Sedimentation

GOAL NAT 4: Control soil erosion in priority areas where erosion causes concern for water quality, safety, and damage to resources and facilities.

Objective NAT 4.1: Enforce restrictions on recreational and other uses in shoreline areas where such uses can significantly increase erosion and cannot be mitigated.

Objective NAT 4.2: Protect and/or restore shoreline vegetation and tributary riparian vegetation to control erosion.

Objective NAT 4.3: Cooperate with applicable agencies and affected private landowners to work on getting BMPs instituted on surrounding lands where offsite activities may affect Reclamation lands and Henry Hagg Lake.

Objective NAT 4.4: Implement an effective erosion control program (standards, guidelines, and BMPs) in all construction, operations, and maintenance programs on Reclamation lands while considering program effects on other resources (natural, scenic, cultural).

Cultural Resources (CUL)

Goal CUL 1: Seek to protect and preserve cultural resources, including prehistoric and historic-period archaeological sites and traditional cultural properties.

Objective CUL 1.1: In accordance with Section 106 of the National Historic Preservation Act (NHPA) seek to protect National Register-eligible sites from impacts from new undertakings.

Objective CUL 1.2: In accordance with Section 110 of the NHPA implement proactive management of cultural resources, focusing on protecting identified resources from damage.

Objective CUL 1.3: Increase awareness of cultural resources compliance and protection requirements among resource management partners.

Objective CUL 1.4: With local partners provide opportunities for public education on area prehistory and history, including the importance of and requirements for protecting these resources.

Indian Sacred Sites (ISS)

Goal ISS 1: *Comply with requirements of Executive Order 13007 (Indian Sacred Sites)*

Objective ISS 1.1 Seek to avoid damage to Indian sacred sites (when present and identified), when avoidance is consistent with accomplishing Reclamation's mission and larger public responsibilities.

Objective ISS 1.2 Provide for access by traditional religious practitioners to sacred sites, when consistent with mission.

Indian Trust Assets (ITA)

Goal ITA 1: *Protect and conserve Indian Trust Assets as specified in applicable Federal mandates.*

Objective ITA 1.1: Seek to avoid any action that would adversely impact Indian Trust Assets as defined in tribal treaties or court decisions.

Recreation and Access (REC)

Land-based Recreation

GOAL REC 1: *Provide adequate sites and facilities for land-based recreational uses while affording the public a quality recreational experience, consistent with natural and cultural resource objectives.*

Objective REC 1.1: In all recreation facility development, focus first on expansion and capacity optimization at existing sites before developing any new sites.

Objective REC 1.2: Coordinate with managing partner (WACO) to provide additional day use sites and facilities in an effort to meet increasing demand in a manner reflecting the physical constraints and safe use of the area being served.

Objective REC 1.3: Coordinate with managing partner (WACO) to assure special events are scheduled and carried out to avoid resource degradation and minimize conflicts with other park users.

Objective REC 1.4: Coordinate with managing partner (WACO) to reduce and/or eliminate the environmental degradation that accompanies unauthorized activities (e.g., littering, off-leash dogs) in accordance with County Code (11.08).

Objective REC 1.5: Contribute to an environment that supports viable concession services, where appropriate; with concession management to follow Reclamation's policy.

Objective REC 1.6: Provide opportunities for wildlife observation and other natural resource based interpretation and education at appropriate locations.

****Objective REC 1.7:** Coordinate with managing partner (WACO) to provide a full range of camping experiences (i.e., RVs, tent-only, and group camping) by reopening Recreation Area "A" East to accommodate camping (also see LMI 3.2 and 3.4).

Shoreline and Water-based Recreation

GOAL REC 2: Provide adequate shoreline and water-based facilities to support the demand for boating and other water-based uses consistent with natural and cultural resource objectives.

Objective REC 2.1: Coordinate with managing partner (WACO) to enhance and provide safe shoreline fishing opportunities and associated parking at Henry Hagg Lake.

Objective REC 2.2: Coordinate with managing partner (WACO) to improve boat launch ramps and associated infrastructure at Henry Hagg Lake consistent with natural and cultural resource protection and conservation objectives.

Objective REC 2.3: Coordinate with managing partner (WACO) to manage peak period use at Recreation Area "A" West boat launch.

****Objective REC 2.4:** Coordinate with managing partner (WACO) to provide an exclusive launch area for non-motorized and portable watercraft at the Cove Area adjacent to Recreation Area "C".

Water Surface Management

GOAL REC 3: Manage the Henry Hagg Lake water surface to accommodate a variety of uses in a safe manner while minimizing conflicts among users.

Objective REC 3.1: Ensure that provision, permitting, and/or expansion of shoreline facilities does not result in providing levels of water access that exceed safe use of the reservoir's water surface.

Objective REC 3.2: Coordinate with managing partner (WACO) and County Sheriff to adequately enforce no-wake boating regulations within the area of the reservoir designated for such use.

Objective REC 3.3: Coordinate with managing partner (WACO), County Sheriff, and Coast Guard Auxiliary to provide information to reservoir users regarding boating safety and operating rules and regulations.

Access

GOAL REC 4: Provide appropriate vehicular and non-motorized access to recreation sites at Henry Hagg Lake consistent with natural, cultural resource, and safety and security objectives.

Objective REC 4.1: Coordinate with WACO to provide for adequate vehicular access to and parking at all designated recreation areas at Henry Hagg Lake; this includes appropriate motor vehicle parking and staging areas adjacent to or near sites designated for non-motorized uses. Such access and parking should be sized in a manner reflecting the physical constraints and safe use of the area being served.

Objective REC 4.2: Coordinate with managing partner (WACO) and County road department to widen road shoulders adjacent to designated recreation areas to accommodate parking outside of the bike lane, where possible.

Objective REC 4.3: Coordinate with WACO to provide for and maintain non-motorized trail opportunities (hiking and bicycling) at Henry Hagg Lake.

Objective REC 4.4: All new or existing facilities and programs will be designed or retrofitted in accordance with current Federal standards for accessibility to persons with disabilities.

Objective REC 4.5: Continue Reclamation policy of prohibiting ORV use on Reclamation lands and work with managing partner (WACO) to actively enforce this regulation.

Objective REC 4.6: Coordinate with managing partner (WACO), County Sheriff's Department, and County road department to implement an "adopt-a-highway" program for trash pick-up along the park road to augment the current County Sheriff's community corrections program dealing with clean-ups along the park road.

****Objective REC 4.7:** Coordinate with managing partner (WACO) to completely separate the Master (shoreline) Trail from its current segments along the County road.

****Objective REC 4.8:** Coordinate with managing partner (WACO) and equestrian groups to provide for and maintain equestrian trails (separate from hiking and bicycling trails) and trail heads at Henry Hagg Lake.

****Objective REC 4.9:** Coordinate with managing partner (WACO) and the County Department of Land Use and Transportation, if feasible and justified due to security concerns and carrying capacity limitations, to implement a limited access concept plan whereby park

traffic is required to access the area through the fee station and local traffic is afforded a separate, gated access.

Land Use, Management, and Implementation (LMI)

GOAL LMI 1: Allow for expanded recreation opportunities and other uses while balancing the need for the preservation of natural and cultural resources, and open space and scenic values.

Objective LMI 1.1: Ensure that siting and design of all new facilities on Reclamation lands maximize compatibility and integration with the open, rural environment of the reservoir and surrounding area.

Objective LMI 1.2: Require compliance with applicable design standards, guidelines, and BMPs for erosion control structures and any other permitted improvements along the shoreline of Reclamation lands (also see Objective NAT 4.4).

****Objective LMI 1.3:** Coordinate with the Northwest Regional Education Service District, Portland State University, WACO, and other pertinent entities to authorize development of the Tualatin Watershed Education & Research Center.

****Objective LMI 1.4:** Coordinate with the Northwest Regional Education Center Service District and Portland State University to ensure that the Tualatin Watershed Education & Research Center meets the requirement to replace the existing elk pasture meadow in an approved location on Reclamation-controlled lands, existing or future.

****Objective LMI 1.5:** Coordinate with the Northwest Regional Education Service District and Portland State University to ensure that the Tualatin Watershed Education & Research Center includes a reasonable location and times for local community events/programs.

GOAL LMI 2: Ensure that reservoir operations are not disturbed as a result of other uses and activities.

Objective LMI 2.1: Require that the Reclamation Zone (operation and maintenance) be described (history, purpose, function) and shown on publicly distributed materials.

Objective LMI 2.2: Safety and security of the dam and area surrounding the dam has priority over public access to this area; if deemed necessary for safety and security reasons this area will be closed to public access.

GOAL LMI 3: Ensure protection of the public, and public resource values and facilities.

Objective LMI 3.1: Require that Reclamation's directives and standards as pertaining to the Federal Wildland Fire Management Policy be followed in all fire prevention and suppression activities on Reclamation lands.

Objective LMI 3.2: Allow for current emergency service agreements to continue and be expanded or modified as needed---Oregon Department of Forestry for fire suppression along the northern portion of Reclamation lands, and Gaston Rural Fire Department for fire suppression along the southern portion of Reclamation lands and medical emergencies within the entire Scoggins Valley Park.

Objective LMI 3.3: Cooperate with other interested agencies and parties to improve emergency communications ability at Henry Hagg Lake.

Objective LMI 3.4: Work with managing partner (WACO), County Sheriff's Department, and the Oregon State Marine Board to ensure an adequate level of law enforcement on Reclamation lands and Henry Hagg Lake.

GOAL LMI 4: Provide informational, educational, and interpretive materials to increase public awareness of recreational opportunities, use restrictions, safety concerns, and natural and cultural resource values.

Objective LMI 4.1: Using Reclamation's and Washington County's sign manuals as appropriate, develop clear, consistent signage to guide public access to and use of Reclamation lands and park facilities.

Objective LMI 4.2: Provide informative and concise public information materials on a continuing basis (including adequate funding for reproduction of these materials) at: fee station, recreation areas, roadside pullouts; and through local merchants, chambers of commerce, government offices, and other means (such as the World Wide Web).

Objective LMI 4.3: Develop an interpretive program that illustrates the prehistoric, historic, and current land use practices, as well as natural features surrounding and visible from Henry Hagg Lake (e.g., tribal use of the area, agricultural use of the valley, forestry practices, geology, etc.).

GOAL LMI 5: Achieve timely implementation of RMP programs and projects.

Objective LMI 5.1: Establish and maintain a clear phasing schedule and list of priorities for RMP implementation; and update on an annual basis.

Objective LMI 5.2: Seek Reclamation and managing partner (WACO) joint funding to implement RMP recreation development and fish and wildlife enhancement efforts according to the priority list and phasing schedule.

Objective LMI 5.3: Keep stakeholders, surrounding landowners, and the public informed regarding the status of implementing the RMP.

Appendix B

Elk Meadow Management Plan

Henry Hagg Lake Resource Management Plan: Draft EA

Elk Mitigation Meadows Maintenance and Monitoring Plan

Henry Hagg Lake, Tualatin Project, Oregon

1.0 Introduction

When Scoggins Dam was constructed, the flooding of the valley (in 1978) that created Henry Hagg Lake, inundated habitat used by elk (*Cervus elaphus roosevelti*) for foraging primarily in the winter. Managed elk pastures are a required component of the Tualatin Project to mitigate for the loss of valley floor meadow habitat. The Bureau of Reclamation (Reclamation) has been working cooperatively with both Oregon Department of Fish and Wildlife (ODFW) and the U.S. Fish and Wildlife Service (USFWS) on the most reasonable and appropriate measures to be implemented at Hagg Lake to ensure the continuation of healthy elk herds in the Scoggins Creek subbasin. The goals of this management plan are to 1) provide approximately 140 acres of high quality forage for wintering elk around Henry Hagg Lake, 2) provide a method of accurately and effectively monitoring elk use of these pastures, and 3) to provide a framework for reporting results of the monitoring effort and coordinating with ODFW and USFWS.

Reclamation researched the history of elk winter range mitigation at Hagg Lake through archived documents. The oldest record that discusses mitigation for the loss of elk winter habitat is the “Supplement to the Final Environmental Statement on Tualatin Project, Oregon” (Supplement) dated December 6, 1973. In this document, Reclamation recognizes that elk winter range would be eliminated in areas inundated by Scoggins Dam. The affected elk population was estimated to be approximately 100 individuals. The Supplement also calls attention to a compensation plan being developed by the Oregon Game Commission (renamed ODFW) in consultation with USFWS and Reclamation. Subsequently a letter was sent from the Director of the Oregon Game Commission to Reclamation’s Regional Director transmitting the “Wildlife Compensation Plan for the Scoggins Reservoir Project” on April 24, 1974. This Plan included nine units around the reservoir that were potential sites to improve elk habitat including a map of their locations and site descriptions. This Plan noted that flexibility in site locations was prudent for both biological and recreational concerns. Reclamation located five other documents in its records search from 1977 through 1992 in which discussion of elk habitat mitigation would be relevant but the subject was given little attention. The issue was brought back to the forefront in 1994 in the “Scoggins Valley/Henry Hagg Lake Recreation Development Finding of No Significant Impact (FONSI) and Environmental Assessment (EA).” The 1994 EA referenced the 1974 Wildlife Compensation Plan and included a map of elk meadow locations based on the 1974 Plan.

Historically elk were abundant throughout Oregon before non-native settlers arrived, according to early accounts by pioneers. Elk were nearly extirpated from Oregon by the late 1890’s due to unfettered hunting by settlers who hunted elk as a primary source of meat. Remnant elk populations became clustered into the Coast Range, the Cascades, and the Willamette Mountains. Elk hunting was abolished in Oregon from 1900 – 1904 and from 1909 – 1932. Throughout the 20th century numerous different strategies for regulating the increasing elk population were initiated by ODFW including manipulations

to the length and timing of hunting seasons, restricting the bag limit, age, and/or sex of animals harvested (ODFW 2002).

ODFW manages elk herds in Oregon to maximize public recreational opportunities within the constraints of habitat capacity and primary land uses. It is also ODFW's responsibility to respond to damage complaints and to minimize elk damage through its policies and regulations.

Elk migrate annually from summer habitat at higher elevations in October through November to lower elevations in the winter. Elk migrate back to higher elevations in March through April. Seasonal movements are in response to vegetation availability and snow cover. In the mild climate of the Coast Range, elk migrate shorter distances between summer and winter ranges (Verts and Caraway 1998). On the west slope of the Cascade Range, for example, migration is less than 64 km and winter ranges are less than 1,100 hectares (Verts and Caraway 1998). Elk in the Coast Range would likely have smaller winter ranges and migrate shorter distances.

To achieve and maintain peak health conditions elk need access to food resources in sufficient abundance to support their needs for winter survival, reproduction, calf survival, and male antler growth (ODFW 2002). Before the construction of Scoggins Dam, landscape level disturbances such as fires and floods set back the process of natural succession in meadow habitat. Human intervention has nearly eliminated these processes and the encroachment of surrounding vegetation, especially unpalatable species, has reduced the value of winter pasture habitat for elk over time (Scotter 1980). All of the elk winter pasture areas at Henry Hagg Lake will require preparation and maintenance to provide high quality winter forage.

2.0 Elk Meadow Rehabilitation and Maintenance Plan

The following narrative provides a description of the components of elk meadow maintenance including meadow rehabilitation, a rehabilitation and maintenance schedule, and buffer establishment. Currently there are approximately 110 acres designated as elk meadow at Henry Hagg Lake. Under this plan elk meadows 6a and 6b would be new meadows that have had no previous meadow rehabilitation. These sites currently are thickly vegetated with non-native, unpalatable species. Meadows 3 and 4 have had ongoing meadow management, however they were not previously defined as elk mitigation meadows in the 1974 Wildlife Compensation Plan or the 1994 EA. Table 2-1 below lists the size of each meadow in acres. Figure 2-1 shows the location of existing and planned elk meadows at Henry Hagg Reservoir.

Table 2-1. Acres of elk pasture at Hagg Lake

Elk Meadow	1	2a	2b	2c	3	4	5a	5b	6a	6b	Total
Acres	19.8	6.0	3.5	6.4	15.2	23.4	6.4	29.5	27.5	1.7	139.4

2.1 Meadow Rehabilitation

For meadows 6a and 6b the first step in rehabilitation would be the removal of Scot's broom (*Cytisus scoparius*), Himalayan blackberry (*Rubrus discolor*), and other woody species that occupy the site. Following this initial step of removing woody vegetation, treatment would be the same among the meadows. The standard practice for pasture development is to spray the existing vegetation with some type of herbicide, plow the field, disc the field, pack ground with rollers, drill seed, and pack ground with rollers again.

The choice of a seed mix should maximize good forage plant species for elk in a grass/clover ratio that has proved attractive to elk at other locations. ODFW's Jewell Meadows Wildlife Area has extensive experience with elk pasture preparation and maintenance and is similar enough to Scoggins Valley in climate conditions that the same seed mix would likely be the best choice at Hagg Lake. ODFW uses a custom seed mix that is 65% grass and 35% clover, meets or exceeds the standards for Oregon certified seed, contains no noxious weeds, is legume inoculated, and is at least 98% pure seed. An example of a seed mix that works well for ODFW is 26% annual rye grass (tetraploid variety), 25% orchard grass, 17% New Zealand white clover, 15% perennial rye grass, 7% birdsfoot trefoil, 6% red clover, and 4% alsike clover (Bryan Swearingen, ODFW Jewell Refuge, January 9, 2003 pers. comm.). An alternative to the above seed mixture would be a beef cattle pasture seed mix that is 65% grass and 35% clover with the same or better seed standards. These are not native grasses and legumes, but they are used ubiquitously in Oregon for livestock pasture and are not invasive or noxious. In addition to the seeding of grasses and legumes for forage, buffer vegetation will be planted during meadow preparation.

ODFW recommends seeding at a rate of 10 lbs/acre with three passes over the pasture with seeding equipment in different directions (30 lbs/acre total). This produces a well seeded meadow and does not result in all the plants growing in clearly defined, side-by-side rows (Bryan Swearingen, ODFW, 2003, pers. comm.)

Each elk meadow would be mowed or hayed every year in the late spring or summer. Vegetation should be removed if it is not being collected for hay or mowed with a rotary brush mower. A rotary mower should be used only two years in succession, then materials should be removed at least every year. Repeat operations. The build-up of vegetation can cause a significant decline in new plant growth if it is left to create a mat over grass. WACO Parks Department or a contractor hired by WACO would conduct this maintenance work. In the past local farmers have been contracted to hay some of the meadow areas. Contracts with local farmers are encouraged because of the benefits to the local community. Contracts should make sure that contractor would remove the cut vegetation completely and commit to do the work even if plants are wet and not good for hay baling. All work conducted within the Reclamation Zone must be coordinated with Tualatin Valley Irrigation District (TVID).

Elk meadows need to be assessed for weed treatment annually and treatment may be required every year. Typical weed species may include: tansy ragwort (*Senecio jacobea*), thistle (*Cirsium* spp.), Himalaya blackberry (*Rubrus discolor*), knapweeds (*Centaurea* spp.), and Scot's broom. Noxious weeds should be spot sprayed as needed in the late

spring/early summer. Weed control during the first year after seeding is critical. By treating weeds early before they become established maintenance in later years will be reduced.

Each meadow would require fertilization at least every 2 years and annual fertilization would be preferable for getting the most successful and healthy plant growth in the meadows. Meadows would get the most elk use as winter pasture, therefore any fertilizer should be applied in early fall, just prior to or shortly after fall rains have occurred. (Fertilization rates should be at 200 lbs per acre.) Elk meadows would have a buffer of vegetation to protect water quality from fertilizer runoff (see discussion of vegetative buffers below). Local farm supply stores can make fertilizer recommendations (type and application rates) based on the soil composition, PH, and the plant species being seeded. In general, a 16-16-16 fertilizer is a good overall product that develops both root systems and vegetation.

Following the schedule provided in Table 2.1-2, one meadow (or meadow complex) would be prepared and seeded (spraying, plowed/disc'd, seeded, and fertilized) each year. Meadows should be reestablished (spraying, plowed/disc'd, seeded and fertilized) at least once every 10 years. Elk meadows may need reestablishment more frequently depending on regrowth of non-palatable species. The ground should be packed down (during the seeding operation to seal the ground and retain moisture for seed germination) afterwards so elk will not sink down into the soft ground or be able to pull up young plants completely.

Table 2.1-2. Elk Meadow Rehabilitation and Maintenance Schedule

Meadow	Summer2004	Fall 2004	Summer 2005	Fall 2005	Summer 2006	Fall 2006	Summer 2007
1	D F	F W	M W		M W	F	M W
2	M		D F	F W	M W		M W
3	M		M		D F	F W	M W
4	M		M		M		D F
5	M		M		M		M
6							

Meadow	Fall 2007	Summer 2008	Fall 2008	Summer 2009	Fall 2009	Summer 2010	Fall 2010
1		M W	F	M W		MW	F
2	F	M W		M W	F	M W	
3		M W	F	M W		M W	F
4	F W	M W		M W	F	MW	
5		D F	F W	M W		M W	F
6				D F	F W	M W	

Meadow	Summer 2011	Fall 2011	Summer 2012	Fall 2012	Summer 2013	Fall 2013	Summer 2014
1	M W		M W	F	MW		D F
2	M W	F	M W		M W	F	M W
3	M W		M W	F	M W		M W
4	M W	F	M W		M W	F	MW

5	M W		M W	F	M W		MW
6	M W	F	M W		M W	F	M W

D = disc/plow, seed. F = fertilize. W = weed treatment. M = mow/hay.

The work shown on Table 2.1-2 may not be accomplished during the year shown due to funding limitations, but the schedule will be followed for the subsequent 10-year period once the initial work for each meadow had commenced. It is anticipated the work in all meadows will have been started by 2006.

2.2 Buffer Plantings

Two types of buffers zones are included in elk meadow rehabilitation: 1) herbaceous buffers along the reservoir edge, and 2) a woody vegetation buffer along portions of the elk meadows below the dam.

Vegetative buffers planted for water quality purposes will be located on the reservoir (downslope) edge of each meadow. These buffers would be mowed as part of meadow maintenance but would not be disced or fertilized to reduce the amount of contaminated runoff that could reach the reservoir. These buffers will be 100 feet wide and composed of native species of herbaceous vegetation. Spot spraying of weeds in the buffer zone would be conducted as part of general meadow maintenance.

ODFW requested that a woody vegetation buffer be established along the eastern and northern edge of meadow 4 near the boundary with Stimson Lumber Company and along the lake access road. The intent would be to provide a visual and sound screen between elk using the meadow and the vehicle traffic in and out of the lumber mill entrance road and the lake. This buffer would be 25-feet-wide and composed of native trees and shrubs. The overstory tree species should be conifers that are best suited to the site conditions. A conceptual planting plan will be prepared at a later date for ODFW review.

2.3 Estimated Rehabilitation and Maintenance Costs

The following are cost estimates provided to Reclamation by ODFW based on costs for similar wildlife habitat management programs. This list may not be comprehensive of all costs associated with maintaining elk pastures.

Table 2. Meadow Rehabilitation and Maintenance Costs

	Estimated cost per acre (w/labor, equip., and fuel)	Total estimated cost for 140 acres
Fertilizer	\$40.00	\$5,600
Seeds	\$25.00	\$3,500
Mowing	\$14.00	\$1,960
Discing/plowing	\$45.00 (fuel and labor only)	\$6,300
Weed control	\$25.00 (excluding labor)	\$3,500

The mitigation efforts are Reclamation's legal responsibility. Reclamation will enter into an agreement with WACO to address specific actions and funding. Funds will come from 1) Reclamation's appropriated budgets, 2) WACO's operating budget when the

work coincides with park operational requirements, and 3) from revenues generated at the park which may be used as a cost share for work in those meadows tied to recreation facilities. Volunteer labor will also be used whenever possible.

3.0 MONITORING PLAN

Because the intent of this management plan is to provide quality elk forage, it is necessary to evaluate the success of the program by monitoring elk use. Monitoring the use of elk meadows is an important part of an adaptive management approach. The 10-year RMP cycle will provide an opportunity to review the effectiveness of the elk meadow maintenance and management actions implemented in this RMP and provide a process to make maintenance changes for the next 10-year cycle. In the interim between RMPs, data of sufficient quality and quantity must be collected to make informed decisions in the future. Anecdotal reports of elk in the park by park staff, park visitors, TVID employees, and others, while important, are not rigorous enough to constitute monitoring. A consistent and repeatable protocol for monitoring must be established for the data to be useful in the future. The results of the monitoring need to be detectable, quantifiable, and show trends in elk use in the meadows. Carefully examining elk meadow use patterns at Hagg Lake can guide future changes in meadow maintenance as required.

Monitoring the use of the elk meadows and determining if management is having the desired effect is possible even with spotty baseline information. The rotating schedule of maintenance provides the opportunity to compare elk meadows that have been plowed/disc'd and reseeded with other meadows yet to undergo this level of restoration to determine if goals are being met. Reclamation, WACO, and ODFW have agreed to meet every two years to discuss the progress of the elk meadow maintenance and monitoring and discuss the plan for the next two year period between meetings. Adjustments to the maintenance and/or monitoring plan can be made if all agencies are in agreement. Additional information may be available from the ODFW from their aerial surveys, hunting records, and other activities. However, the elk population does not reside within the park all year. The resident populations of elk will/could be affected by other factors not under the jurisdiction of Reclamation or WACO.

Because it is difficult and time consuming to make systematic direct observations of elk use patterns, fecal pellet counts will be used as an index of elk use. Monitoring and data collection on ungulates through the use of fecal pellet counts began as early as 1940 (Bennet et al. 1940). This method has many advantages and will meet the goal of this plan by providing a quantifiable approach to documenting elk presence and use trends in the elk meadows. The monitoring plan would follow methods described in "Ground-based inventory methods for selected ungulates: moose, elk and deer" (Resources Inventory Committee 1998).

Transect lines will be placed 75 feet apart across the short axis of each elk meadow. On each transect circular plots (100 sq. ft., radius of 5.6 ft.) will be spaced at 50 ft intervals. The center point of each circular plot will be marked with PVC pipe sunk into the ground, and referenced with coordinates from a GPS unit. The GPS data will be entered into the existing GIS data layer of the elk meadows. Approximately 4-10 transects with 4-8 circular plots per transect would be placed in each meadow, depending on its size and

shape. The ends of the transects and the center of the plots should be permanently marked with PVC pipe set low enough that mowing equipment can safely mow over them. Reclamation, with input from ODFW, would assist WACO in the establishment of the transects and plots. The circular plots would be counted once every 2 weeks from October through February. After each visit the plots would be cleared of pellets.

Photos will be taken every year to monitor the condition of the meadows for successful vegetative growth of meadow and buffer vegetation. A protocol will be established prior to implementation to establish and identify photo points for consistent approach to photo documentation. Sample data sheets are included in Appendix A. The data sheet includes lines for recording the necessary data and a map that could be used to note other field observations such as elk trails, indications of bedding, or other use indicators. Collected field data will be supplemented by elk use patterns observed by WACO and ODFW staff.

A field crew of at least 2 people is needed to place transects, count and clear plots, and record data. Once the transects and plots have been established it should require one staff person one day to visit all plots and record the required data. A detailed description of the monitoring procedure will be provided to WACO and Reclamation will work with park staff to train WACO personnel on the monitoring procedure.

The following equipment will be required to establish and monitor pellet group counts:

- GPS unit
- Survey stakes (PVC to mark plot centers)
- Waterproof field notebooks
- Datasheets printed on waterproof paper
- Field measuring tape
- Metal cattle ear tags or rebar to mark ends of transects
- Flagging and permanent markers
- Camera and film (or digital camera)

4.0 Data Analysis and Reporting

The data forms used in the field and any additional field notes from monitoring crews will be submitted to Reclamation for analysis after each monitoring effort. Field data will be converted to an electronic format by Reclamation's Lower Columbia Area Office staff in Portland and can be provided in either MS Excel or as hard copies of the field data sheets and printouts of the Excel database.

The collected elk usage data will be analyzed statistically using Analysis of Variance (ANOVA) or a similar appropriate test. Biennial reports showing analyses and data trends will be prepared by Reclamation to be presented at biennial meetings with ODFW and WACO. A report will be prepared that summarizes the findings of the monitoring effort to date in narrative, graphic, and tabular formats as appropriate. Biennial meetings will give WACO, ODFW, and Reclamation a forum to discuss the progress of the elk meadow mitigation program and what, if any, changes might be needed. The cumulative results of the monitoring efforts will be reported in the next Hagg Lake RMP.

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Signatures

Ronald J. Eggers, Bureau of Reclamation, Area Manager
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Date

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Date

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Date

Example of Data Form

Henry Hagg Lake Elk Meadow Monitoring

Investigator's Names: _____

Elk Meadow Number: _____ **Date:** _____ **Time:** _____

Weather conditions (air temp., precip., cloud cover, etc.): _____

Transect 1

Lat/long or UTM coordinates. Start point: _____ **End point:** _____

Transect Length: _____ **Number of plots on transect:** _____ **Plot area:** _____

Record pellet groups counted below for each plot in transect 1.

P1: _____ **P2:** _____ **P4:** _____ **P5:** _____

Notes _____

Transect 2

Lat/long or UTM coordinates. Start point: _____ **End point:** _____

Transect Length: _____ **Number of plots on transect:** _____ **Plot area:** _____

Record pellet groups counted in each plot in transect 2 below .

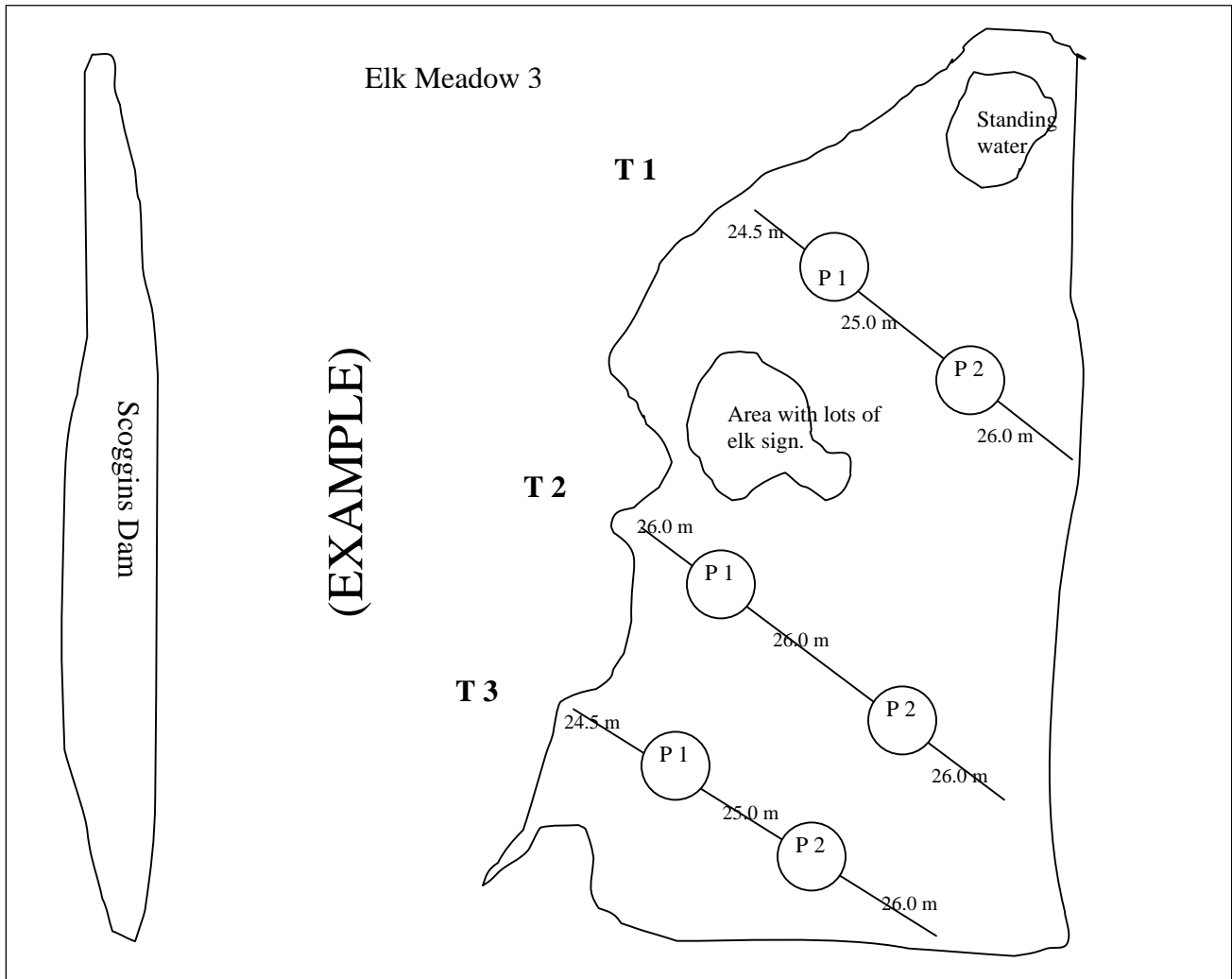
P1: _____ **P2:** _____ **P4:** _____ **P5:** _____

Notes _____

Describe photographs taken in this meadow _____

Back of data form

Sketch or photocopy the elk meadow in the space below from an aerial photograph and draw the approximate locations of transects, plots, and other geographical reference points.



Additional notes. Best access points, for example.

Appendix C

USFWS Consultation

Henry Hagg Lake Resource Management Plan: Draft EA

[Appendix C material is available as hardcopy from BOR.]

Appendix D

Tribal Correspondence

Henry Hagg Lake Resource Management Plan: Draft EA

[Appendix D material is available as hardcopy from BOR.]

